[4910-13-U]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39 [66 FR 7568 1/24/2001]

[Docket No. 2000-NM-313-AD; Amendment 39-12084; AD 2001-01-13]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 737-300, -400, and -500 Series Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment adopts a new airworthiness directive (AD); applicable to all Boeing Model 737-300, -400, and -500 series airplanes. This AD requires, among other actions, a one-time detailed visual inspection of the fuel quantity indicating system (FQIS) wiring and fuel tubing on the inboard side of the right wing rib wing buttock line (WBL) 227 and on the aft side of stringer No. 13 to determine if clearance exists between the FQIS wire harness and the refuel tube and tube coupling, and to detect any loose or broken refuel tube clamp or bracket or chafing of the FQIS wire harness; and corrective actions, if necessary. This action is necessary to detect and correct chafing and to prevent electrical contact between the FQIS wiring and the surrounding structure, which, in conjunction with another wiring failure outside the fuel tank, could result in fire or explosion of the fuel tank. This action is intended to address the identified unsafe condition.

DATES: Effective February 28, 2001.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of February 28, 2001.

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Sherry Vevea, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1360; fax (425) 227-1181.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to all Boeing Model 737-300, -400, and –500 series airplanes was published in the **Federal Register** on October 3, 2000 (65 FR 58966). That action proposed to require, among other actions, a one-time detailed visual inspection of the fuel quantity indicating system (FQIS) wiring and fuel tubing on the inboard side of the right wing rib wing buttock line (WBL) 227 and on the aft side of stringer No. 13 to determine if clearance exists between the FQIS wire harness and the refuel tube and tube coupling, and to detect any loose or broken refuel tube clamp or bracket or chafing of the FQIS wire harness; and corrective actions, if necessary.

Actions Since Issuance of Previous Proposal

Since the issuance of the notice of proposed rulemaking (NPRM), the FAA has reviewed and approved Boeing Alert Service Bulletin 737-28A1168, Revision 1, dated January 11, 2001. This new revision revises the format of Boeing Alert Service Bulletin 737-28A1168, dated September 26,

2000; adds certain text, references, drawings, parts and materials, and notes; revises a compliance time; makes certain technical changes; and adds certain tables and figures. In addition, the new revision does not include the procedure for a permanent repair (splicing the wires) if any damage to the wire harness is detected. Revision 1 of the service bulletin adds no additional work for the operators.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Requests to Remove or Change the Compliance Plan Requirement

The Air Transport Association (ATA) of America and two of its members request removing or changing the requirement in paragraph (a) of the proposed AD for submitting a compliance plan schedule to the FAA. The commenters state that it is unnecessary for operators to submit compliance plan schedules because operators already have internal planning schedules for accomplishing required actions. Therefore, submitting a schedule would not accelerate completion of the work required and would not improve operational safety.

One of the commenters states that the proposed rule should allow more flexibility in consideration of unforeseen circumstances. One suggestion is for the FAA to omit the requirement [in paragraph (a) of the proposed AD] for operators to submit specific dates to the FAA, and allow operators to submit a "date range" for accomplishing the inspection and corrective actions [required by paragraph (b) of the proposed AD]. Another suggestion is for operators to submit a "running plan of completion" (e.g., five airplanes in the first month, another five in the second month) until the AD requirements for an operator's fleet are met. The commenter states the adoption of either of these suggestions would enable the operators to meet the compliance time required by the proposed AD, yet still allow operators to include the inspection into a flight schedule with minimal impact on operations.

If the FAA does not accept the preceding recommendations, the commenters recommend that the compliance plan requirement include enough flexibility so that schedule updates are not required. The commenters also recommend that schedules should include enough flexibility to allow for unforeseen circumstances for the following reasons:

- The proposed AD does not specify whether updates to the schedule would be required (or allowed). For that reason, it is unclear whether it would be necessary to submit a schedule change, or whether an alternative method of compliance (AMOC) would be required for such a change.
- It is impractical to require operators to submit a schedule for accomplishing the proposed inspections within a 6-month period because a variety of operational factors would require changes on a daily basis.

The commenters add that the principal maintenance inspector (PMI) should be allowed to verify an operator's maintenance program and confirm the accomplishment of AD requirements. (This is already within the scope of the PMI's responsibilities.) Confirmation of the accomplishment of the required actions by the PMI would not impose upon the operators an inflexible compliance schedule that would require frequent adjustments. Flexible schedules would decrease the impact on airline operations.

The FAA does not concur that the requirement for operators to submit a compliance plan schedule should be removed or changed. The purpose of the plan is to ensure that operators are able to meet the 6-month compliance time specified in paragraph (b) of the proposed AD for accomplishing the inspection and corrective actions. Because of the work involved, 6 months is an aggressive compliance time that can be met only if operators carefully plan their compliance schedules at the outset. However, we consider that a 6-month compliance time for accomplishing the inspection and corrective action requirements is necessary because of the risks associated with any chafed wiring in fuel tanks.

The proposed AD would require a one-time submittal of a plan that identifies each of the operator's affected airplanes, and the dates and maintenance events when the required actions will be accomplished. It would not require operators to strictly adhere to the plan or to submit updates to the FAA. To clarify this, we have added NOTE 2 to the final rule, stating that operators are not required to submit revisions to the compliance plan required by paragraph (a) of this AD. It is expected that the responsible PMI will confirm the ongoing accomplishment of the actions required by the AD for each operator's affected fleet. We view the compliance plan as the starting point for discussions between the PMI's and their operators.

We acknowledge that, in certain instances, it may be necessary for operators to request extensions to the 6-month compliance time specified by paragraph (b) of the proposed AD for accomplishing the inspection and corrective actions. However, submitting a compliance plan within the proposed 15-day compliance time specified by paragraph (a) of the proposed AD will help to ensure that operators have considered all factors necessary for meeting inspection and corrective action requirements at the beginning of the compliance time period. If an operator later requests an extension of the compliance time, we will consider the submitted compliance plan, and the operator's reasons for not meeting it, in determining whether a requested extension to the schedule is justified. In the past, some operators were unable to meet the requirements of certain AD's within the compliance time due to poor planning. As a result, last-minute requests for extensions put operators at risk of grounding airplanes, depending upon the FAA resources available to process the extensions and FAA willingness to grant extensions.

In light of this information, we consider it necessary for operators to engage in compliance planning. In addition, we consider that the requirement for operators to submit a compliance plan will minimize unscheduled out-of-service time and the grounding of airplanes. No change to paragraph (a) of the final rule is necessary in this regard.

Request to Clarify Compliance Plan Requirement for Foreign Airlines

One commenter, the Civil Aviation Authority (CAA) of the United Kingdom, requests clarification that the compliance plan requirement in the proposed AD does not apply to foreign airlines.

The FAA concurs that the compliance plan required by paragraph (a) of the proposed AD does not apply to non-U.S.-registered airplanes. Because only U.S.-registered airplanes are under FAA jurisdiction, we cannot require the accomplishment of the proposed action on airplanes registered outside the United States. If the CAA elects to adopt the requirements of this final rule, the CAA would determine whether a compliance plan is needed and how it would be handled. The compliance plan requirement in this AD is intended to verify to the FAA that the affected U.S.-registered airplanes will be able to meet the requirements of the proposed AD within the specified compliance time. No change to paragraph (a) of the final rule is necessary in this regard.

Requests to Extend the Compliance Time

The ATA states that several operators have requested that the proposed 6-month compliance time for the inspection and corrective actions, as required by paragraph (b) of the proposed AD, be extended. ATA suggests an extension to 18 months, another commenter suggests 15 months, and another commenter suggests a minimum of 12 months. In general, the commenters consider that the 6-month compliance time is too short for the following reasons:

- Only two confirmed instances of FQIS wire harness chafing have occurred that prompted the release of the proposed NPRM. In one of those cases, there was flight deck indication of the chafing, by intermittent FQIS errors, that could have been used by the operator to locate a potential chafing problem before any secondary failure could cause an ignition event.
- The proposed 6-month compliance time would require approximately 600 to 1,200 inspections to be accomplished on an unscheduled basis, potentially requiring special routing to capable maintenance stations. Unscheduled fuel tank inspections increase the risks to maintenance personnel involved with fuel tank entry, whereas routine and planned maintenance inspections provide a more controlled and safe environment. Such a compliance

time would require additional maintenance shifts, and additional elapsed time out-of-service if corrective actions are required. In addition, any other maintenance that could be accomplished during time out-of-service, aside from the requirements of this proposed AD, would be limited.

- Although Boeing Alert Service Bulletin 737-28A1168 was issued on September 26, 2000, it is not reasonable to consider the time between publication of the proposed AD and the effective date of the final rule as time fully available to operators for accomplishing the required inspection in light of the significant operational and economic impact of a 6-month compliance time.

The commenters state that, based on the above reasons, an extension of the compliance time is necessary to allow accomplishment of the actions required by the proposed AD during scheduled intermediate maintenance visits of the majority of operators when appropriate facilities and personnel are available. To mitigate the safety concerns relative to extending the compliance time, one operator proposes to alert all maintenance personnel of the problem addressed in the proposed AD and of the potential safety implications. The commenters consider that extending the compliance time would still allow operators to maintain a level of safety equivalent to that intended by the proposed AD.

The FAA does not concur that the 6-month compliance time required by paragraph (b) of the proposed AD should be extended, except for those airplanes that have accomplished the requirements of AD 99-03-04, as specified in paragraph (c) of the final rule. We point out that the commenters have provided no technical justification regarding how the level of safety could be maintained during the extended period. In addition, they have not provided specific information or data on the risk factors that may exist for maintenance personnel in accomplishing the actions required by the proposed AD. In developing an appropriate compliance time for the FQIS wire harness inspection and corrective actions, the FAA considered not only the degree of urgency associated with addressing the subject unsafe condition, but the practical aspect of inspecting the FQIS wire harness and addressing any discrepancy found within an interval of time that parallels normal scheduled maintenance for the majority of affected operators. With regard to the degree of urgency associated with this unsafe condition, we evaluated the risk associated with chafed wiring in the fuel tank in determining that the 6-month compliance time required by paragraph (b) of the proposed AD is necessary to ensure the safety of the fleet.

Following the Trans World Airlines (TWA) Flight 800 accident, the National Transportation Safety Board (NTSB) performed FQIS safety analysis that revealed several scenarios where a combination of a latent failure or aging condition within the fuel tank and a subsequent single failure or electrical interference condition outside the tank can cause an ignition source to occur inside a fuel tank. Examples of these in-tank and out-of-tank conditions that can contribute to a multiple-failure ignition scenario were found in airplane service records and on airplanes that were inspected by the FAA and the NTSB. In light of these findings, we have determined that these same types of scenarios are applicable to Model 737-300 through -500 series airplanes.

We have received reports indicating that four additional operators found damaged FQIS wire harness wiring in the right main fuel tank due to chafing against the refuel tube. To date, seven occurrences of FQIS wire chafing have been reported to the FAA, with the estimate that only a small portion of the affected airplanes have been inspected (including those airplanes that were inspected as part of the Fuel System Safety Program). In attempting to preclude future fuel tank explosions, we find it necessary to address all aspects of viable ignition scenarios to ensure that potential failures of the fuel system cannot contribute to ignition of the flammable fuel vapors in airplane fuel tanks. By requiring an inspection of the FQIS wire harness and corrective actions, “best practices” are used inside the tank (to eliminate the possibility of creating latent “spark-gap” locations in the event of high voltage on the FQIS wires). This final rule will adequately address the identified unsafe condition and meet the appropriate fail-safe standards to provide the level of safety (i.e., tank ignition events should never occur) intended by the regulations in place at the time of the original certification of the design.

Related to the one commenter's justification for extending the compliance time based on alerting its maintenance personnel of the unsafe condition, the FAA finds that, while it is always necessary for certificate holders to notify maintenance personnel of an unsafe condition, such notification does not actually effect compliance with AD requirements. Therefore, the FAA deems that justifying an extension of the compliance time on this basis is not appropriate.

In regard to the flight deck indication of the FQIS wire harness chafing by intermittent FQIS errors, the manufacturer stated that erroneous fuel quantity readings "might" be evident in the flight deck. A short of the FQIS wire is likely to be detectable when it becomes a hard failure, which occurs if the bare wire remains in contact with structure, or if the FQIS circuit forms a hard connection to another circuit due to a failure condition outside the fuel tank. However, an intermittent connection to another circuit may not be evident to flight or maintenance crews, but could still create a risk of an in-tank arc. In the minutes immediately preceding the in-flight breakup of the TWA Flight 800 airplane, the cockpit voice recorder indicated that the crew noticed a fuel flow indicator that was providing erratic indications. Such indications could have been due to a failure occurring in a wire bundle. The NTSB investigation determined that the fuel flow indicator wiring was routed in the same wire bundle as FQIS wiring on the TWA Flight 800 airplane. Because a chafed or bare FQIS wire normally operates at five volts depending upon the attitude of the airplane, the amount of fuel in the tank, and the conditions of flight, it is possible that such conditions might not cause a short that is detectable in the flight deck. The other reported chafing event discussed in the proposed AD was found during an operator's heavy maintenance check, which was not associated with trouble-shooting an FQIS indication problem.

After careful consideration of all of the preceding information, we have determined that 6 months represents an appropriate interval of time for accomplishing the proposed inspections of the FQIS wire harness and corrective actions to ensure that an acceptable level of safety is maintained. However, under the provisions of paragraph (e) of the final rule, the FAA may approve requests for adjusting the compliance time if data are submitted to confirm that such an adjustment would provide an acceptable level of safety. No change was made to the compliance time required by paragraph (b) of the final rule.

Requests to Clarify the Inspection and Corrective Action Requirements

1. One commenter requests revising the "Explanation of Relevant Service Information" section in the proposed AD by adding the corrective action "relocating the lockwire away from the FQIS wiring." In addition, the words "or lockwire" should be added after the word "jumper" in paragraph (b)(1) of the proposed AD. These clarifications are necessary because incorrectly installed lockwires could also damage the FQIS wires.

The FAA concurs that it is necessary to clarify that, if necessary, the lockwire should be relocated away from the FQIS wiring. Although the "Explanation of Relevant Information" section is not included in the final rule, we have revised paragraph (b)(1) of the final rule to read "and relocate the bonding jumper or lockwire away from the wiring, if necessary."

2. That same commenter also requests deleting a corrective action that specifies "splicing the wires" in the "Explanation of Relevant Service Information" section of the proposed AD. Related to this, the commenter requests that paragraph (b)(3)(iii) of the proposed rule, which includes a splicing requirement, be deleted from the proposed AD. The commenter requests this change because, since the issuance of the proposed AD, the commenter has determined that the procedure for splicing the FQIS wires in the right main fuel tank inboard of right wing station WBL 227 is not practical. As a result, the Accomplishment Instructions of Revision 1 of the service bulletin does not include procedures for the splicing repair that were included in the original issue of the service bulletin. Instead, Revision 1 specifies repairing FQIS wire harness damage to the wire shield of the shielded wire or to the conductor of the unshielded wire by replacing the FQIS wire harness.

Although the FAA concurs that the proposed AD should not include a splicing requirement, we again point out that the Explanation of Relevant Service Information section is not included in the final rule. However, we have deleted paragraph (b)(3)(iii) from the final rule to remove the splicing requirement. After reviewing the procedure for splicing the wires, we have concluded that, because

of the difficulties associated with installing a splice to the FQIS wire harness in the right wing station WBL 227, replacement of the FQIS wire harness is more appropriate. However, we have added NOTE 3 to the final rule to give operators credit for accomplishing the repair by splicing the wires per the procedure included in the original issuance of the service bulletin.

3. Another commenter requests revising paragraph (b) of the proposed AD to clarify that the inspection is to determine whether a "minimum" of 3/8-inch clearance exists between the FQIS wire harness and the refuel tube and tube coupling. The FAA concurs that such clarification is necessary, and has changed paragraph (b) of the final rule accordingly.

Requests to Revise the Cost Estimate

1. The ATA states that several operators request the FAA revise the cost estimates in the proposed AD. These commenters recommend that the cost estimate take into account fleetwide estimates of elapsed time out-of-service, and include costs associated with access and closure procedures. The ATA points out that the inspection in the original issue of the service bulletin specifies 17.5 work hours, which includes the time required to drain, vent, access, enter, and close the fuel tank. That estimate is significantly greater than the estimate in the proposed AD of 1 work hour. The affected airplanes would be out of service from 1 to 4 days, during which other maintenance activities would be limited. The commenters suggest that the cost estimate should include:

- Costs for access and closure procedures because the majority of the proposed inspections must be done on an unscheduled basis, and many of the scheduled visits would not provide the required access.
- Costs for elapsed time out-of-service for the entire fleet because additional time is required for any discrepancy detected. In addition, other maintenance activities are greatly limited because electrical power to the airplane is secured during much of the out-of-service period.

The FAA does not concur. The cost impact information describes only the "direct" costs of the specific actions required by this AD. We recognize that, in accomplishing the requirements of any AD, operators may incur "incidental" costs in addition to "direct" costs. The cost analysis in AD rulemaking actions, however, typically does not include incidental costs, such as the time necessary to drain, vent, enter, and close a fuel tank. Because incidental costs may vary significantly from operator to operator, they are almost impossible to calculate.

Even though, as stated in the proposed rule, we recognize that airplanes could be taken out of service for as long as 2 days, we do not have enough information to evaluate the number of airplanes that may be affected or the additional downtime that may be required. Therefore, providing a fleet-wide estimate of the elapsed time out-of-service would be futile.

Further, because AD's require specific actions to address specific unsafe conditions, they appear to impose costs that would not otherwise be borne by operators. However, because of the general obligation of operators to maintain and operate aircraft in an airworthy condition, this appearance is deceptive. Attributing those costs solely to the issuance of this AD is unrealistic because, in the interest of maintaining and operating safe aircraft, prudent operators would accomplish the required actions even if they were not required to do so by the AD. In this case, we have determined that direct and incidental costs are still outweighed by the safety benefits of the AD. No change was made to the cost estimate in the final rule.

2. The ATA also recommends that the FAA review the cost allocated for replacing a wiring harness. One operator indicates that actual costs are 10 per cent greater than the cost cited in the proposal. The FAA infers that the commenters are requesting including the cost of the FQIS wire harness in the Cost Impact section of the proposed rule.

The FAA does not concur with the commenters' requests to include the cost of an FQIS wiring harness in the Cost Impact section of the proposed rule. The Cost Impact section of the proposed AD only includes the costs associated with the "direct" costs of the specific actions required, which include developing a compliance plan and inspecting the FQIS wiring harness in the right main fuel tank. The proposed AD does not include the cost of "on-condition" actions, such as replacing a

damaged FQIS wiring harness if one is detected during the required inspection ("repair, if necessary"). Such on-condition repair actions would be required to be accomplished, regardless of AD direction, to correct an unsafe condition identified in an airplane and to ensure the airworthiness of that airplane, as required by the Federal Aviation Regulations. No change was made to the cost estimate in the final rule.

Request to Clarify the Applicability of the Proposed AD

One commenter requests clarification of whether the requirements of the proposed AD includes airplanes that have been modified by installing BFGoodrich transient suppression devices and transient suppression units. The FAA infers that the commenter is requesting issuance of an AMOC for those airplanes that have been modified per AD 99-03-04, amendment 39-11018 (64 FR 4959, February 2, 1999).

The FAA partially concurs with the commenter's request. AD 99-03-04 requires the installation of components to provide shielding and separation of the fuel system wiring (that is routed to the fuel tanks) from adjacent wiring. That AD also requires the installation of flame arrestors and pressure relief valves in the fuel vent system. The actions of that AD are intended to prevent possible ignition of fuel vapors in the fuel tank and external ignition of fuel vapor exiting the fuel vent system, and consequent propagation of a flame front into the fuel tanks.

Although we acknowledge that AD 99-03-04 addresses the potential for ignition sources within airplane fuel tanks, both AD 99-03-04 and the proposed AD address different aspects of the multiple-failure ignition scenarios identified by the NTSB and the FAA in the course of accident investigation. The proposed AD addresses the potential for chafed FQIS wiring in the fuel tank, and provides a means to avoid introducing ignition energy onto the FQIS wires outside of the tank, which will ensure that operators maintain the level of safety intended by the regulations. Therefore, compliance with the actions of the proposed AD would be required, even though an operator has accomplished the actions required by AD 99-03-04. However, we have determined that extending the compliance time from 6 to 18 months is appropriate for all affected airplanes that have been modified per AD 99-03-04, because those airplanes incorporate an additional level of circuit protection that significantly reduces the likelihood that an exposed conductor inside a fuel tank will become an ignition source. We have added a new paragraph (c) to the final rule to include this conditional compliance time extension for the referenced airplanes.

Request to Ensure Parts Availability

One commenter, the CAA, requests information regarding the availability of parts and support from the manufacturer and applicable vendors to support all affected airline operators, including the worldwide fleet, in accomplishing the corrective actions required by the proposed AD within the compliance time of 6 months. The FAA infers the commenter is requesting information regarding the availability of FQIS wiring harness parts and the support needed to inspect and correct any discrepancies found while accomplishing the actions required by the proposed AD.

The FAA concurs with the commenters' request for assurance that adequate parts and support will be available for all operators in meeting the requirements of the proposed AD. In response, the FAA has received a statement from the manufacturer that the parts needed to replace FQIS wiring harnesses will be readily available to the operators, and that such parts are always kept in stock and replenished continually. In addition, the service bulletin includes a list of the parts and materials needed by the operator to meet the requirements of the proposed AD, along with the applicable reference material and drawings.

Request for Information of Actions Taken to Eliminate Clamp Failure

One commenter, the Safety Regulation Group of the CAA, requests information on any actions that have been taken to eliminate failure of the refuel tube clamp due to a preload on the clamp. The proposed rule attributed FQIS wire chafing to "a refuel tube broke due to a preload on the clamp." This caused the refuel tube to move and subsequently come in contact with the FQIS wire. As paragraph (b) of the proposed AD requires only a one-time inspection, failures of the clamp may occur after that inspection is accomplished. As a result, further chafing of the FQIS wire could occur and go unnoticed.

The FAA concurs with the commenter's request for more information of the actions taken to eliminate failure of the refuel tube clamp. In response, we offer the following information:

- The manufacturer attributed the broken refuel tube clamp to a preload on the clamp. The slotted support bracket, along with the clamp, holds the refuel tube to structure and can be installed with a preload because of possible shifting of the bracket. The preload on the clamp could have occurred during production or during operator maintenance of the airplane.
- The service bulletin includes procedures for inspecting loose or broken refuel tube clamps or slotted support brackets, replacing broken refuel tube clamps, replacing or repairing broken slotted support brackets, and verifying that there is no preload on the refuel tube or clamps. Inspecting the refuel tube clamp and bracket and determining that no preloads exist on those components will help prevent future failure of the clamp due to the existence of a preload on the clamp.
- The FAA will initiate discussions with the manufacturer regarding any changes that might be required to the maintenance manuals to alert maintenance personnel to the potential of a preload on the refuel tube clamp.

No change to the body of the final rule was necessary in this regard.

Request to Revise the Reporting Requirement

One commenter suggests that, instead of requiring operators to submit a compliance plan [as specified in paragraph (a) of the proposed AD], the FAA should revise the reporting requirement in paragraph (c) of the proposed AD [cited as paragraph (d) in the final rule] to require operators to report their inspection findings to the FAA (as well as to the manufacturer). The commenter considers that such a change would enable operators to maintain flexibility in their schedules, and keep the FAA informed of the operator's ability to meet AD requirements.

The FAA does not concur that it is necessary to require operators to submit inspection findings to the FAA. We point out that the manufacturer will send reports of such findings to the FAA, so a revision to the reporting requirement in paragraph (d) of the final rule is not necessary.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Interim Action

This is considered to be interim action until final action is identified, at which time the FAA may consider further rulemaking.

Cost Impact

There are approximately 1,974 Model 737-300, -400, and -500 series airplanes of the affected design in the worldwide fleet. The FAA estimates that 796 airplanes of U.S. registry will be affected by this AD.

It will take approximately 1 work hour per airplane to accomplish the required inspection, at an average labor rate of $60 per work hour. Based on these figures, the cost impact of this inspection on U.S. operators is estimated to be $47,760, or $60 per airplane.

It will take approximately 16 work hours per airplane to accomplish the required compliance plan, at an average labor rate of $60 per work hour. Based on these figures, the cost impact of the compliance plan on U.S. operators is estimated to be $764,160, or $960 per airplane.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required

by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation Administration

We post ADs on the internet at "av-info.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2001-01-13 BOEING: Amendment 39-12084. Docket 2000-NM-313-AD.

Applicability: All Model 737-300, -400, and -500 series airplanes; certificated in any category.

NOTE 1: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To detect and correct chafing and to prevent electrical contact between the fuel quantity indicating system (FQIS) wiring and the surrounding structure, which, in conjunction with another wiring failure outside the fuel tank, could result in fire or explosion of the fuel tank, accomplish the following:

Compliance Plan

(a) Within 15 days after the effective date of this AD, submit a plan to the FAA that identifies a schedule for compliance with paragraph (b) of this AD. This schedule must include, for each of the operator's affected airplanes, the dates and maintenance events (e.g., letter checks) when the required actions will be accomplished. For purposes of this paragraph, "FAA" means the Principal Maintenance Inspector (PMI) for operators that are assigned a PMI, or the cognizant Flight Standards District Office for other operators. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

NOTE 2: Operators are not required to submit revisions to the compliance plan required by paragraph (a) of this AD to the FAA.

Inspection and Corrective Actions

NOTE 3: Repairs accomplished by splicing the wires in accordance with the procedure included in Boeing Alert Service Bulletin 737-28A1168, dated September 26, 2000, prior to the effective date of this AD, are considered acceptable for compliance with the requirements of paragraphs (b)(1), (b)(2), and (b)(3) of this AD.

(b) Except as provided by paragraph (c) of this AD: Within 6 months after the effective date of this AD, perform a one-time detailed visual inspection of the FQIS wiring and fuel tubing on the inboard side of the right wing rib wing buttock line (WBL) 227 and on the aft side of stringer No. 13 to determine if clearance of 3/8 inch or greater exists between the FQIS wire harness and the refuel tube and tube coupling, and to detect any loose or broken refuel tube clamp or bracket, or chafing of the FQIS wire harness, in accordance with Boeing Alert Service Bulletin 737-28A1168, Revision 1, dated January 11, 2001.

NOTE 4: For the purposes of this AD, a detailed visual inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

(1) If the clearance between the FQIS wire harness and the refuel tube is less than 3/8 inch, prior to further flight, readjust the refuel tube, and relocate the bonding jumper or lockwire away from the wiring, if necessary, in accordance with the service bulletin.

(2) If any loose or broken refuel tube clamp or bracket is found, prior to further flight, replace the broken clamp with a new clamp; repair the broken bracket or replace the broken bracket with a new bracket; and secure the loose clamp or bracket; as applicable; in accordance with the service bulletin.

(3) If any chafing of the FQIS wiring harness is found, prior to further flight, replace the wire harness with a new wire harness or accomplish the applicable action(s) specified in paragraph (b)(3)(i) or (b)(3)(ii) of this AD, in accordance with the service bulletin.

(i) For jacket damage only that is less than 1-inch in length with no sign of abrasion to the wire insulation: Install a teflon sleeve over the wiring. At the next scheduled "C" Check, but no later than 15 months after the effective of this AD, repair the wire harness or replace the wire harness with a new wire harness.

(ii) For jacket damage or a harness with an exposed shield or conductor and the insulation of the other wire is not damaged (there can be no broken shield strands if the shield wire is damaged or no broken wire strands if the unshielded wire is damaged): Install a teflon sleeve over the wiring terminal and along the wire to the damaged area.

(c) For airplanes on which the modification per AD 99-03-04, amendment 39-11018, has been accomplished prior to the effective date of this AD: Within 18 months after the effective date of this AD, perform the actions specified in paragraph (b), and in paragraph (b)(1) or (b)(2) of this AD, in accordance with Boeing Alert Service Bulletin 737-28A1168, Revision 1, dated January 11, 2001.

Reporting Requirement

(d) Submit a report of inspection findings to Service Bulletin Engineering, Boeing Commercial Airplane Group, P.O. Box 3707, Mail Stop 2H-37, Seattle, Washington 98124-2207; at the applicable time specified in paragraph (d)(1) or (d)(2) of this AD. The report must include all the information specified in the Accomplishment Instructions of Boeing Alert Service Bulletin 737-28A1168, Revision 1, dated January 11, 2001. Information collection requirements contained in this regulation have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(1) For airplanes on which the inspection required by paragraph (b) of this AD is accomplished after the effective date of this AD: Submit the report within 10 days after performing the inspection.

(2) For airplanes on which the inspection required by paragraph (b) of this AD has been accomplished prior to the effective date of this AD: Submit the report within 10 days after the effective date of this AD.

Alternative Methods of Compliance

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA PMI, who may add comments and then send it to the Manager, Seattle ACO.

NOTE 5: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(g) Except for the requirements of paragraph (a) of this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 737-28A1168, Revision 1, dated January 11, 2001. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(h) This amendment becomes effective on February 28, 2001.

FOR FURTHER INFORMATION CONTACT: Sherry Vevea, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1360; fax (425) 227-1181.

Issued in Renton, Washington, on January 11, 2001.
Donald L. Riggin, Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.